ABSTRACT

A node-link structure is laid out in a space with negative curvature, such as the hyperbolic plane. Nearby relationship data are obtained for an element in the structure, indicating information about nearby node-link relationships; then layout data for the element are obtained, based on the nearby relationship data. The layout data indicate the element's position relative to a parent in the negatively curved space. The layout data can indicate a position displacement and an angle displacement between the parent and the element. The nearby relationship data can be obtained by counting grandchildren of the parent for each child of the parent that is in a set that are being or have been laid out. The counts can be used to obtain a radius and an angle for each child in the set, and the radii and angles can be used to obtain the position displacement and angle displacement. The nearby node-link relationships can thus include only relationships among the parent and its children and grandchildren.